

Planning & Scheduling - A Circular Process Supporting Continuous Improvement



January 29, 2018

Presenter

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Who is Solufy?

- ▶ Founded in 2003
- ▶ 100% dedicated to achieving excellence in Maximo planning & scheduling
- ▶ Staff comprised of current and former Maximo users, consultants, implementers, planners and schedulers
- ▶ Creators of the AKWIRE Visual Suite for Maximo; utilized by customers world wide

Using a Planning and Scheduling Tool...

- ▶ Who actually plans / schedules their work?
 - ▶ How do you do it?
 - ▶ Paper (Post-it notes)?
 - ▶ Excel?
 - ▶ P&S Tool?
- 



Agenda

- ▶ Data Requirements
- ▶ Data Requirements from a Process Perspective
- ▶ Advanced Planning & Scheduling
- ▶ Improving the Process and Doing it Again

- ▶ You are encouraged to ask questions at any time

Data Requirements

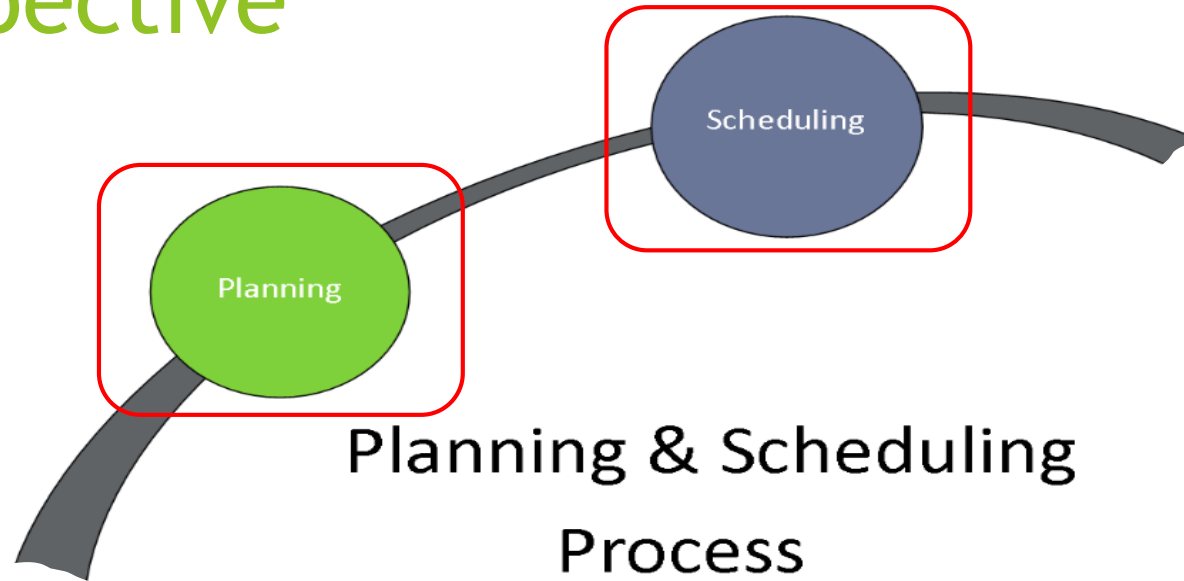
What normally comes to mind:

- ▶ Calendars/Shifts
- ▶ Crafts/Skills
- ▶ Laborers
- ▶ Job Plans
- ▶ Work Orders

Other considerations:

- ▶ Time Off/Extra Work
- ▶ Time Capture
- ▶ Schedule Compliance
- ▶ Job Plan Reviews

Data Requirements from a Process Perspective



Availability - Who is available to do the work when you need it done?

- ▶ Calendars
- ▶ Shifts
- ▶ Time Off
- ▶ If your average worker has:
 - ▶ 3 weeks vacation
 - ▶ 1 week of sick time
 - ▶ 10 paid holidays
- ▶ Hours that impact your P&S
 - ▶ 6 weeks x 40 hrs/wk = 240 hrs
 - ▶ Workforce of 10 people
 - ▶ 10 people x 240 hrs = 2400 hrs
- ▶ Extra Time
 - ▶ Approved OT or shift changes?
- ▶ Not accounting for Time Off / Extra Work has a huge impact on your Planning & Scheduling!

Availability - Who is available to do the work when you need it done? Cont...

- ▶ Other impacts of not knowing complete availability
 - ▶ PM Forecasts need to be aware of vacation, sick time, training ...
 - ▶ Long Term P&S
 - ▶ Shutdown planning
 - ▶ Major projects
 - ▶ Etc...

Planning - Do you have the information in your plans to get the schedule right?

- ▶ Ensure all items needed to schedule are populated and accurate (e.g. Status, Priority, Work Type, Supervisor, custom fields, etc...)
- ▶ Craft Requirements
- ▶ Planned Materials
- ▶ Tools
- ▶ Services
- ▶ Photos, Audio recordings
- ▶ Permits, LOTO, Attached documents
- ▶ Child and/or Task Work Orders

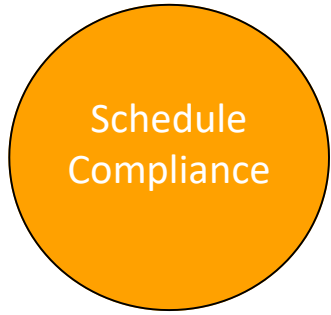
Scheduling - Are you doing what needs to be done when it needs to be done?

- ▶ What work must be done first? Normally based on a combination of:
 - ▶ Compliance / Regulatory Date
 - ▶ Priority
 - ▶ Critical Assets
 - ▶ Asset/Location Availability
 - ▶ Resource workload based on 100%, 80%, ???

Capture Time - Are you getting accurate records of the work being performed?

What does Capturing Time have to do with Planning & Scheduling?

- ▶ If you want to compare your Plan to what was actually performed, then you need to capture Actuals
- ▶ Are you capturing time at the WO level? If you plan to the task, do you also enter time at the task level?
- ▶ Allows laborers to capture feedback about the accuracy of the work they have been assigned



Schedule Compliance - How closely does what you scheduled match what was done?

► What is Schedule Compliance?

Percentage of scheduled WOs completed / Total number of scheduled WOs that should have been completed

► 10 WOs scheduled for this week

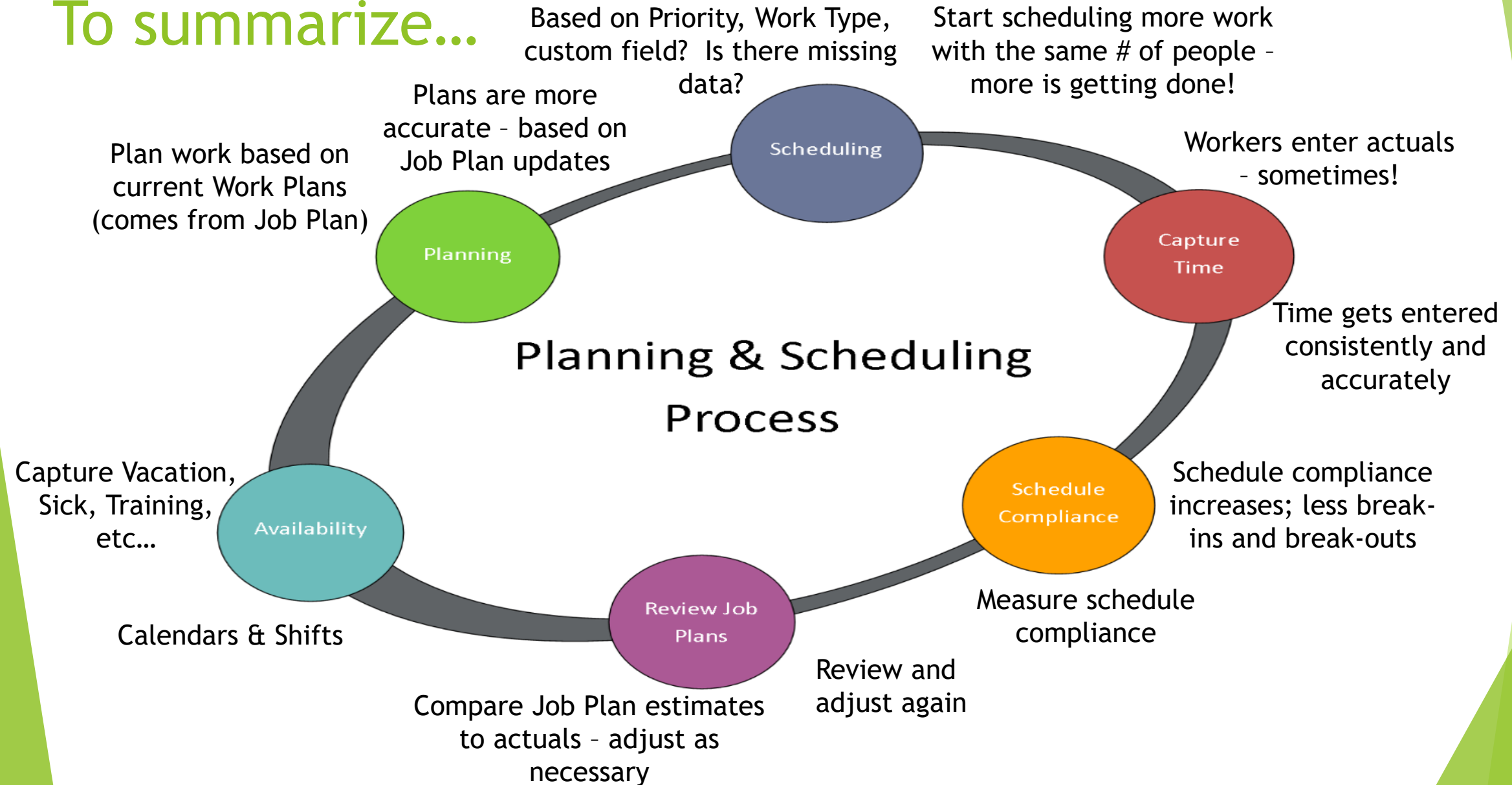
► 8 WOs completed

► Schedule compliance percentage = ??? **80%**

Review Job Plans - How can you improve the process for next time?

- ▶ Why do I need to review my Job Plans?
 - ▶ Misconception: Job Plan definitions don't change
- ▶ Many factors can require a Job Plan to be updated
 - ▶ Process improvements within Maximo
 - ▶ Aging workforce
 - ▶ New technology
 - ▶ Climate
 - ▶ Etc...

To summarize...



Advanced Planning & Scheduling

Work Order Tracking Bulletins: (0) [Go To](#) [Reports](#) [Start Center](#) [Profile](#) [Sign Out](#) [Help](#)

Find: Select Action

List Work Order **Plans** Assignments Related Records Actuals Safety Plan Log Failure Reporting Specifications Service Address Map

Work Order: 1159 Calibration Loop 1 Site: BEDFORD Status: WAPPR
Parent WO: >>

Children of Work Order 1159 [Filter](#) 0 - 0 of 0 [Download](#)

Sequence	Record	Record Class	Summary	Location	Asset	Status
...No rows to display...						

Select Assets Select Locations Select Work Orders **New Row**

Tasks for Work Order 1159 [Filter](#) 0 - 0 of 0 [Download](#)

Sequence	Task	Summary	Estimated Duration	Status	Owner	Owner Group
...No rows to display...						

Labor [Materials](#) [Services](#) [Tools](#)

Labor [Filter](#) 1 - 1 of 1 [Download](#)

Task	Crew Type	Craft	Skill Level	Vendor	Quantity	Labor	Crew	Regular Hours	Rate	Line Cost
		ELECT			1			0:00	17.00	0.00

Details

Task: <input type="text"/>	Vendor: <input type="text"/> >>	Regular Hours: <input type="text"/> 0:00
Crew Work Group: <input type="text"/> >>	Labor Contract: <input type="text"/> >>	Rate: <input type="text"/> 17.00
Crew Type: <input type="text"/> >>	Quantity: <input type="text"/> 1	Line Cost: <input type="text"/> 0.00
Craft: ELECT	Crew: <input type="text"/> >>	Rate Changed? <input type="checkbox"/>
Skill Level: <input type="text"/>	Labor: <input type="text"/> >>	
	Outside? <input type="checkbox"/>	

Advanced Planning & Scheduling

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Tasks for Work Order 1159 Filter 0 - 0 of 0 Download

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...No rows to display...						

New Row

Labor Materials Services Tools

Labor Filter 1 - 1 of 1 Download

Task	Crew Type	Craft	Skill Level	Vendor	Quantity	Labor	Crew	Regular Hours	Rate	Line Cost
		ELECT			1			0:00	17.00	0.00

Details

Task:

Crew Work Group:

Crew Type:

Craft: ELECT

Skill Level:

Vendor:

Labor Contract:

Quantity: 1

Crew:

Labor:

Outside? ☐

Regular Hours: 0:00

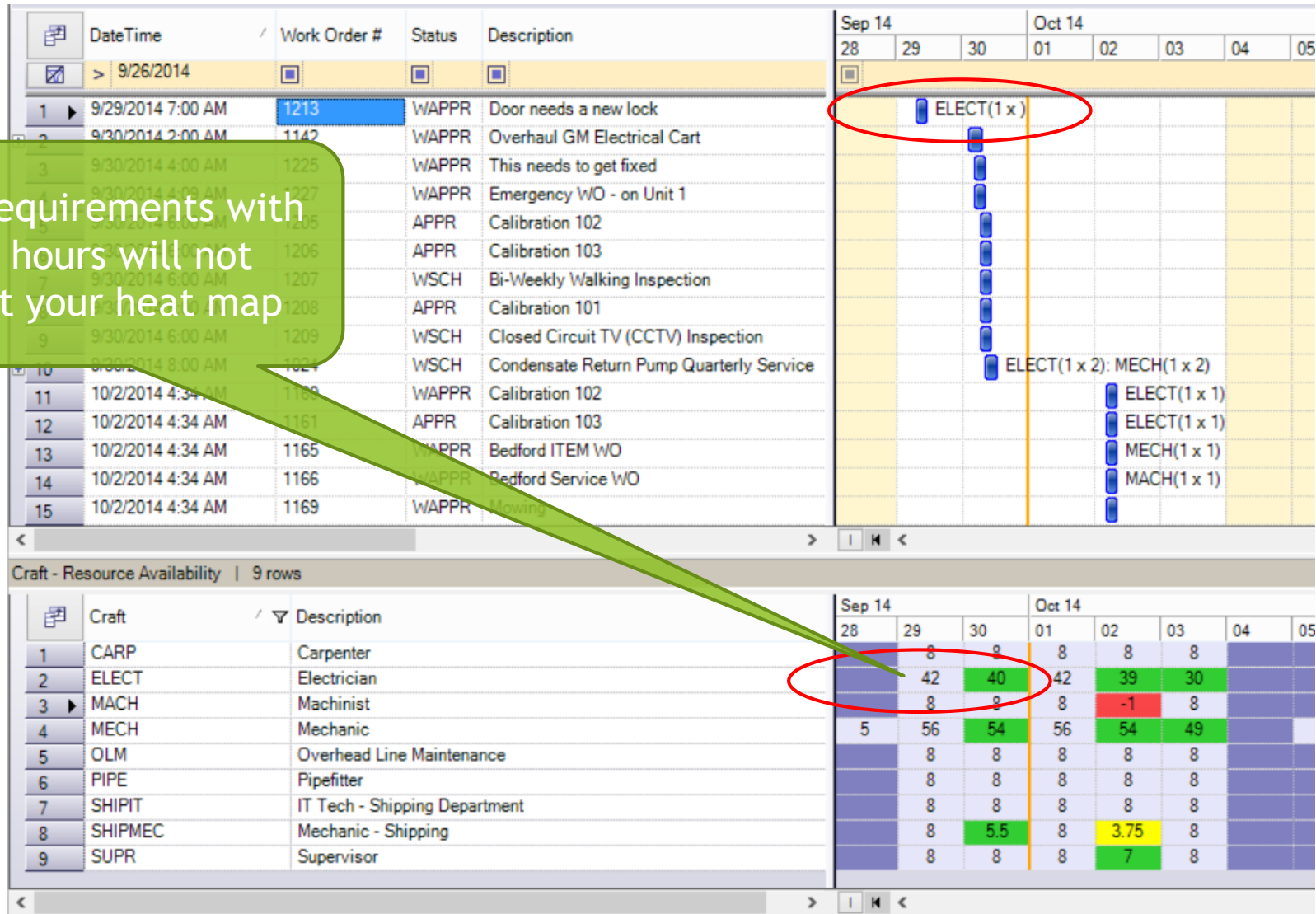
Rate: 17.00

Line Cost: 0.00

Rate Changed? ☐

Advanced Planning & Scheduling

Craft Requirements with zero hours will not impact your heat map



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Job Plans

Bulletins: (0) Go To Reports Start Center Profile Sign Out Help IBM.

Find: Select Action

Details

Status: ACTIVE Job Plan: ADDMEMDSK - Add Desktop Memory Default WO Class: WO Priority: Interruptible? Suspend Flow Control? Flow Action: Assist?

Template Type: Maintenance Duration: 0:30 Classification: Class Description: Launch Entry Name: Include Tasks in Schedule? ☒ Start Constraint Offset: Finish Constraint Offset:

Responsibility

Supervisor: Crew: Lead: Work Group: Owner: Owner Group: Crew Work Group:

Job Plan Tasks Filter 1 - 4 of 7

Sequence	Task	Description	Duration	Meter
10	Power down desktop		0:05	
20	Disconnect power and all cables		0:02	
30	Remove cover		0:02	
40	Add additional memory		0:05	

Planned Labor Filter 1 - 4 of 7

Task	Crew Type	Craft	Skill Level	Labor	Crew	Quantity	Hours	Rate	Line Cost
10		HARDWARE				1	0:05	100.00	8.33
20		HARDWARE				1	0:02	100.00	3.33
30		HARDWARE				1	0:02	100.00	3.33
40		HARDWARE				1	0:05	100.00	8.33

Hours for each task are:
Task 10 - 0:05 hrs
Task 20 - 0:02 hrs
Task 30 - 0:02 hrs
Task 40 - 0:05 hrs
Etc...

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Job Plans Bulletins: (0) [Go To](#) [Reports](#) [Start Center](#) [Profile](#) [Sign Out](#) [Help](#)

Find: Select Action

Job Plan: Add Memory to Desktop Organization: Site: Attachments

Revision:

Details

Status: Default WO Class:

Template Type: WO Priority:

Duration: Interruptible? ☐

Classification: Flow Controlled? ☐

Class Description: Suspend Flow Control? ☐

Launch Entry Name: Action:

Include Tasks in Schedule? ☒ Flow Action Assist? ☐

Start Constraint Offset:

Finish Constraint Offset:

Responsibility

Supervisor: >> Work Group: >>

Crew: >> Owner: >>

Lead: >> Owner Group: >>

Crew Work Group: >>

Job Plan Tasks [Filter](#)

Sequence	Task	Description	Nested Job Plan	Duration	Meter
10	Power down desktop			0:05	>>
20	Disconnect power and all cables			0:02	>>
30	Remove cover			0:02	>>
40	Add additional memory			0:05	>>

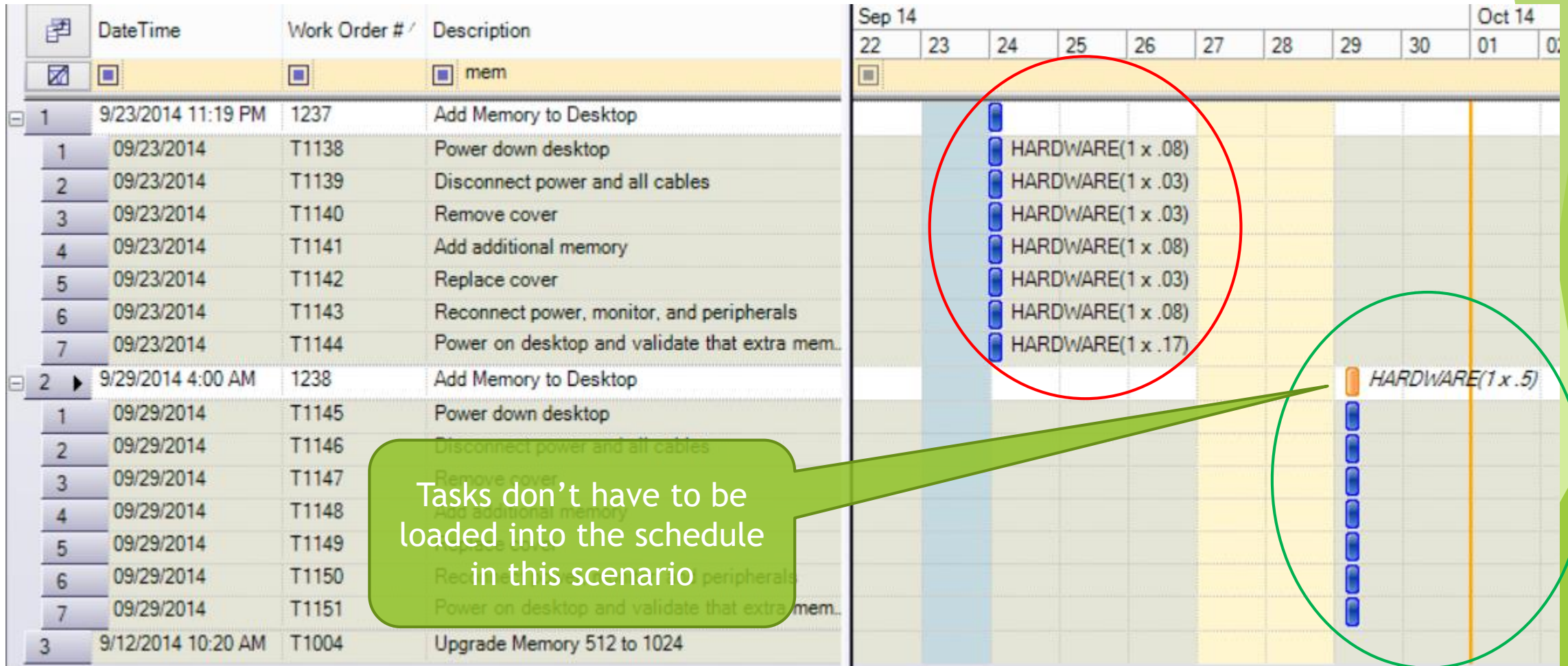
New Row

Labor [Filter](#)

Task	Crew Type	Craft	Skill Level	Labor	Crew	Quantity	Hours	Rate	Line Cost
		HARDWARE				1	0:30	00.00	50.00

Versus
One Required Craft
against the Parent WO
(i.e. no Task # entered)

Advanced Planning & Scheduling



Advanced Planning & Scheduling

				Sep 14								
DateTime		Work Order #	Description	20	21	22	23	24	25	26	27	28
93	9/22/2014 1:54 PM	1232	Need additional safety railing for rear entrance.									
1	09/22/2014	1240	Obtain Permit				CONSTR(1 x 2)					
2	09/23/2014	1241	Pour concrete and place posts					CONSTR(1 x 4)				
3	09/24/2014	1242	Weld top railing						CONSTR(1 x 4)			
4	09/25/2014	1243	Paint Railing							CONSTR(1 x 2)		
94	9/22/2014 2:17 PM	1233	Fix flat tire on vehicle SJ3 X18									
95	9/22/2014 3:40 PM	27817	Replace windows				CARP(1 x 8)					
96	9/22/2014 5:40 PM	27818	HVAC Filter Replacement in Lab				CARP(1 x 1)					

- ▶ Well defined WO and Tasks
 - ▶ Hours are appropriately defined and tasks are scheduled on separate days

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Work Order Tracking

Bulletins: (0) Go To Reports Start Center Profile Sign Out Help IBM

Find: Select Action

List Work Order Plans Assignments Related Records **Actuals** Safety Plan Log Failure Reporting Specifications Service Address Map

Work Order: 1232 Need additional safety railing for rear entrance. Site: BEDFORD Status: APPR
Parent WO:

Children of Work Order 1232 Filter 1 of 4

Tasks for Work Order 1232 Filter 0 - 0 of 0

Labor Materials Services Tools

Labor Filter 1 - 1 of 1

Task	Labor	Name	Approved?	Start Date	Start Time	End Time	Regular Hours	Rate
	BALDWIN	Kurt Baldw in		9/25/14			18:00	16.00

Labor

Task: Labor: BALDWIN Kurt Baldw in Approved?

Details

* Craft: CONSTR * Start Date: 9/25/14 End Date: * Type: WORK
Skill Level: FIRSTCLASS Start Time: End Time: Timer Status:
Crew: * Regular Hours: 18:00 Line Cost: 288.00
* Rate: 16.00

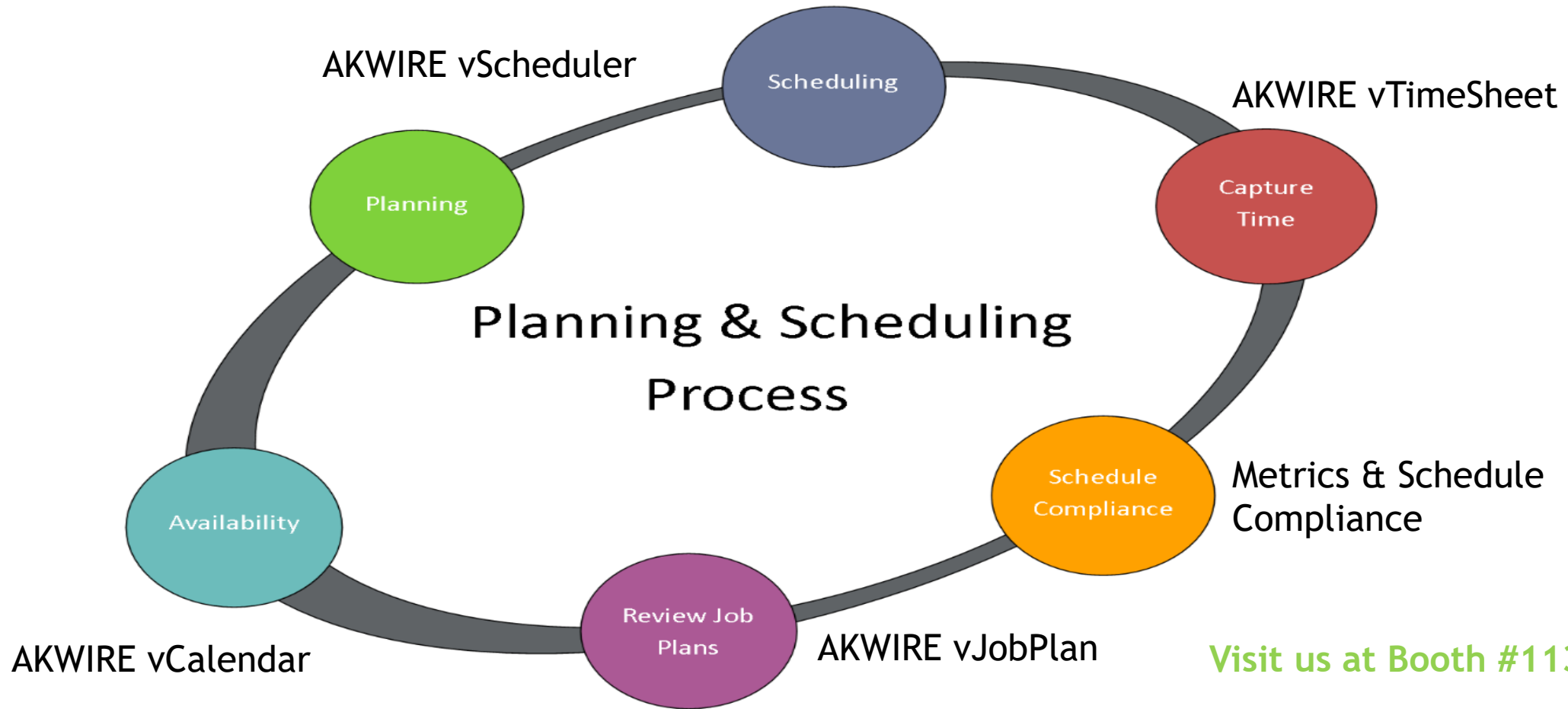
- Hours are entered against the parent WO instead of the task WOs
- Entered hours exceed Scheduled hours
- Which tasks took longer?

Advanced Planning & Scheduling - Recap

- ▶ Job Plans -> Work Plans should have Craft requirements and not 'zero' hours.
- ▶ Ensure Craft requirements entered against a task are not "too" defined (i.e. 0:05 hrs) unless it's truly required
- ▶ If Planning & Scheduling to the task/child, try to capture hours at the task/child level as well

Evaluate Tools to help with your process

A comprehensive P&S suite will include tools to help you manage every step of the process



Visit us at Booth #113

Questions?

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Thank You!

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